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Subject: Dryad: Data Access and Availability for IRIS and per G2G Recommendations

Hello IO All!

Hope that you had good holidays. Happy New Year.

I am sending this on because I believe it will be of interest to the IRIS process and that there seems to be an exciting and emerging interest in data access / availability (e.g., the NAS meeting next week on "Integrating Environmental Health Data to Advance Discovery"). This was discovered as part of the G2G effort which recognized the need for data access and repository maintenance to facilitate the computational platform we proposed. I would note that a major recommendation out of the related SOT CCT "Building for Better Decisions: Multi-scale Integration of Human Health and Environmental Data" meeting was that publication of data should be a requisite for acceptance of journal articles.

In learning more about this topic, I identified Dryad as a potential mechanism to address this need. <u>Dryad</u> is both an international repository of data underlying peer-reviewed scientific and medical literature, and a membership organization, governed by journals, publishers, scientific societies, and other stakeholders. The scientific, educational, and charitable mission of Dryad is to promote the availability of data underlying findings in the scientific literature for research and educational reuse. Dryad is a resource that enables both **data preservation** and **data availability** to researchers and the public. There are no technical barriers to Dryad accepting data files from published EPA/NIEHS funded research, and it could be a very useful interface with HERO. (I also think that IRIS should take a roll in asking journals that we rely upon to be open access.) Please also NOTE that Dryad has the imprimatur of being funded by the NSF. Additional information on Dryad is available below.

In a recent discussion with Dryad data managers, several possible synergies / opportunities between Dryad and EPA (or e.g., NIEHS-generated data or the CEBS database) were identified that I said I would bring to the attention of relevant EPA and NIEHS management:

- facilitate systematic review for <u>IRIS or OHAT</u> assessments (by archiving the data needed)
- provide another venue for data from EPA assessments per se since they probably meet the
 Dryad criteria as peer-reviewed publications (this would need to be discussed with Dryad but
 could serve as an additional, more universal communication vehicle for our products)
- as a link from the HERO database to the data itself
- vehicle for deposit and preservation of data (both retrospective and prospective)

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Perhaps best of all, Dryad is conveniently located here in Durham. Please take a look at what is offered by their effort. I expect that the summary article(s) for the SOT CCT B4BD meeting will at a minimum make mention of them. And I am happy to help set up future discussions if you agree that there is some important potential here for IRIS or any of our other EPA research publications. Peggy Schaeffer, the communications coordinator for Dryad, is also cc'd on this message.

Cheers,

. Annie

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Think occasionally of the suffering of which you spare yourself the sight. (Albert Schweitzer)



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Dryad is distinguished by the close association of data deposition with the process and business of scholarly publishing, and by using article publication as a model for how researchers can benefit from data sharing infrastructure. Dryad has the potential to transform the way research data are communicated and preserved. The credibility and effectiveness of the research enterprise is due in large part to the social contract behind scholarly publishing. Researchers disclose their work to their peers in return for professional credit. In so doing, they also expose their findings to be confirmed or refuted, and enable other researchers to build upon their results. Dryad seeks to extend this social contract to research data by providing a model for how a disciplinary repository can motivate researchers to disclose the data that is of the greatest value for scientific reuse, that associated with publications, and realize the manifold benefits of free access to scientific data in perpetuity.

Dryad serves as a repository for tables, spreadsheets, flat files, and all other kinds of published data that do not have another discipline-specific repository. Dryad welcomes data from toxicology and public health research. The Dryad repository allows investigators to validate published findings, explore new analysis methodologies, repurpose the data for research questions unanticipated by the original authors, and perform synthetic studies such as formal meta-analyses. All data files in Dryad are available for download and reuse, except those that are under a temporary embargo period, per journal policy.

As of Dec 20, 2012, Dryad contains 2451 data packages and 6648 data files, associated with articles Dryad has been funded by NSF since 2009, and is now in the process of developing a sustainable infrastructure as an nonprofit membership organization. More information about the NSF Grants and the Dryad Business Plan are available. The list of Dryad charter members is available.

Dryad actively works with other scientific repositories. These repositories have agreed to exchange data with Dryad and assist in the development of coordinated mechanisms for data submission and search:

- Knowledge Network for Biocomplexity (KNB)
- NCBI GenBank
- TreeBASE
- DataONE

Links to some journal policies on data archiving are here:

Joint Data Archiving Policy: http://datadryad.org/pages/jdap

collected journal instructions about data archiving: http://wiki.datadryad.org/Journal_instructions

Dryad repository: http://datadryad.org

Dryad documentation: http://wiki.datadryad.org

Blog: http://blog.datadryad.org
Twitter: http://twitter.com/datadryad